

APPENDIX A
RECEIVING STREAM INFORMATION

Flow Frequencies Determinations
January 31, 2014

2012 Impaired Waters Fact Sheet

Stream Data & Statistics
Hardness
Temperature
pH
WQS parameters background concentrations

MEMORANDUM
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER DIVISION
Blue Ridge Regional Office

Subject: Flow Frequencies Determinations for Reissuance of VPDES Permit VA0062685;
Pepper's Ferry Regional Wastewater Treatment Authority

To: Permit File

From: Bob Tate, Water Permit Writer *RT*

Date: January 31, 2014

Attachments: flow calculations spreadsheet; New River withdrawals and discharges data sheet

This memo is a revision of the previous flow frequencies determination memo dated May 28, 2009.

The Pepper's Ferry Regional Wastewater Treatment Authority discharges treated wastewater to the New River near Radford, VA. Stream flow frequencies are required at this site for use in developing effluent limitations for the VPDES permit.

The USGS has operated a continuous record gauge on the New River at Radford, VA (#0317100) since 1940. The gauge is located at the Route 11 bridge, approximately 6 miles upstream of the discharge point. The flow frequencies for the gauge and the discharge point are presented below. The values at the discharge point were calculated using drainage area proportions and account for known withdrawals and discharges located between the gauge and the discharge point, Outfall 001. (Withdrawals and discharges are explained in the next page.) This analysis does not address any other withdrawals, discharges, or springs between the gauge and the discharge point which may influence flow in the New River.

New River at Radford, VA (#0317100)
Drainage Area = 2748 mi²

1Q30 = 678 cfs	
1Q10 = 719 cfs	High Flow* 1Q10 = 840 cfs
7Q10 = 887 cfs	High Flow* 7Q10 = 1210 cfs
30Q10 = 1020 cfs	High Flow* 30Q10 = 1660 cfs
30Q5 = 1140 cfs	Harmonic Mean* = 2350 cfs

Using drainage area proportions, the river flows were projected to just above the outfall.

New River above discharge point
Drainage Area = 2791 mi²

1Q30 = 689 cfs = 445 MGD	High Flow* 1Q10 = 853 cfs = 551 MGD
1Q10 = 730 cfs = 472 MGD	High Flow* 7Q10 = 1229 cfs = 794 MGD
7Q10 = 901 cfs = 582 MGD	High Flow* 30Q10 = 1686 cfs = 1089 MGD
30Q10 = 1036 cfs = 669 MGD	Harmonic Mean* = 2387 cfs = 1542 MGD
30Q5 = 1158 cfs = 748 MGD	

Flow Frequencies Determinations for Reissuance of VPDES Permit VA0062685
Pepper's Ferry Regional Wastewater Treatment Authority
Page 2

Withdrawals by the NRV Regional Water Authority (formerly Blacksburg-Christiansburg-VPI Water Authority) and the Radford Army Ammunition Plant (RAAP) intake #1 are incorporated into the analysis. NRV and RAAP withdrawal data for the five calendar years (2009-2013) before permit reissuance are from the Virginia Water Use Data System and the Virginia Annual Water Withdrawal Reports. Wasted water returned to the New River by the WTPs is not accounted. Discharges from the Christiansburg Wastewater Treatment Plant (WWTP) are also incorporated into the analysis. WWTP monthly average discharge data are from discharge monitoring reports for the same five calendar years (2009-2013).

For a very conservative analysis, maximum daily withdrawal values are calculated for the NRV and RAAP facilities. Maximum daily values are calculated for both high flow and low flow months during 2009-2013. Similarly, minimum daily discharge values for the WTTTP for both high flow and low flow months are used. Withdrawal and discharge data are attached.

For the NRV facility, the highest average monthly withdrawal during the high flow periods* is 6.96 MGD (April 2011 and April 2012). For the RAAP facility, the highest average monthly withdrawal during the high flow periods* is 31.18 MGD (February 2011). For the WWTP, the lowest monthly average discharge during high flow periods* is 1.93 MGD (February 2009). Thus conservative net flow of withdrawals and discharge during high flow periods* is -36.21 MGD.

For the NRV facility, the highest average monthly withdrawal during the low flow periods (June-December) is 7.64 MGD (September 2010). For the RAAP facility, the highest average monthly withdrawal during the low flow periods is 30.42 MGD (December 2011). For the WWTP, the lowest monthly average discharge during low flow periods is 1.88 MGD (July 2010). Thus conservative net flow of withdrawals and discharge during low flow periods is -36.19 MGD.

Accounting for withdrawals and discharges, the flow frequencies at the discharge point are shown below.

New River above discharge point
Drainage Area = 2,791 mi²

1Q30 = 445 - 36.19 = 409 MGD	High Flow* 1Q10 = 551 - 36.21 = 515 MGD
1Q10 = 472 - 36.19 = 436 MGD	High Flow* 7Q10 = 794 - 36.21 = 758 MGD
7Q10 = 582 - 36.19 = 546 MGD	High Flow* 30Q10 = 1089 - 36.21 = 1053 MGD
30Q10 = 669 - 36.19 = 633 MGD	Harmonic Mean* = 1542 - 36.21 = 1506 MGD
30Q5 = 748 - 36.19 = 712 MGD	

*High flow months are January through May.

Step-by-step flow calculations are in the attached spreadsheet. Gauge flow frequencies were compiled in 2005 with data collected through water year 2003. Subsequent (updated) gauge "low flow" statistics differ 2% or less from those compiled in 2005. Updated gauge "high flow" statistics are not available. Thus "2005" data are used for gauge flows.

FLOW CALCULATIONS

SITE OF INTEREST	DRAINAGE AREA	CALCULATION	HARMEAN	HF30Q10	HF7Q10	Z30Q5	Z30Q10	Z7Q10	Z1Q10	Z1Q30	UNIT
New River at Radford, Va.	2,748	A	2350	1660	1210	840	1140	1020	887	719	cfs
New River above discharge point	2,791	B = $2791/2748 \times A$	2387	1686	1229	853	1158	1036	901	730	cfs
New River above discharge point		C = $0.646 \times B$	1542	1089	794	551	748	669	582	472	MGD
high flow net withdrawal/discharge	D	-36.21	-36.21	-36.21	-36.21						MGD
low flow net withdrawal/discharge	D					-36.19	-36.19	-36.19	-36.19	-36.19	MGD
flow frequency at discharge point	E = C + D	1506	1053	758	515	712	633	546	436	409	MGD

New River average daily withdrawal & discharge data summaries from stream gauge 03171000 to Pepper's Ferry RWTA Outfall 001

NRV Regional Water Authority (formerly Blacksburg-Christiansburg-VPI Water Authority)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	6.04	6.74	6.20	6.66	6.37	6.08	6.01	6.13	6.83	6.93	6.49	6.06
2012	6.23	6.71	6.54	6.96	6.59	6.47	6.65	6.74	7.41	7.01	6.31	5.89
2011	6.34	6.93	6.68	6.96	6.40	6.57	6.62	7.25	7.26	7.01	6.32	5.97
2010	6.57	6.94	6.55	6.95	6.56	6.51	6.81	6.95	7.64	6.28	6.45	6.22
2009	6.26	6.85	6.49	6.78	6.53	6.47	6.41	6.11	7.31	6.84	6.44	6.14

high flow maximum withdrawal = **6.96 MGD**

low flow maximum withdrawal = **7.64 MGD**

Radford Army Ammunition Plant upstream intake (Bldg. 408)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	20.10	18.52	20.52	19.60	15.88	19.37	18.38	19.84	20.52	17.78	16.32	17.08
2012	24.81	20.83	19.33	23.15	23.23	25.11	19.04	17.77	21.60	24.56	22.69	23.12
2011	31.15	31.18	28.36	25.75	24.34	26.90	25.07	29.55	29.89	28.21	28.25	30.42
2010	22.98	23.42	20.31	19.90	19.49	21.51	20.94	25.32	21.03	20.68	20.95	26.43
2009	25.55	26.43	25.23	24.93	23.13	19.37	18.94	18.61	19.33	19.16	21.47	21.32

high flow maximum withdrawal = **31.18 MGD**

low flow maximum withdrawal = **30.42 MGD**

Christiansburg Wastewater Treatment Plant

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	3.6	2.6	2.4	2.8	3.2	2.7	3.7	2.4	2.1	2.1	2.1	2.8
2012	2.2	2.3	2.6	2.1	2.3	2.3	1.9	2.3	2.1	2.1	1.9	2.0
2011	2.1	2.3	2.9	3.0	3.5	2.4	2.1	2.3	2.4	2.5	2.2	2.7
2010	3.303	3.104	3.131	2.386	2.299	2.005	1.875	2.082	2.452	2.175	2.1	1.9
2009	2.298	1.931	2.576	2.382	3.932	3.563	2.773	2.170	2.286	2.182	2.788	3.694

high flow minimum discharge = **1.931 MGD**

low flow minimum discharge = **1.875 MGD**

high flow net flow adjustment = **-36.21 MGD**

low flow net flow adjustment = **-36.19 MGD**



2012 Impaired Waters

Categories 4 and 5 by Basin & Stream Name

New River Basin

Cause Group Code: N29R-01-PCB

New River, Claytor Lake, Peak Creek, Reed Creek and Stony Creek

Location: The impairment begins at the I-77 bridge crossing the New River and extends downstream to the VA/WVA State Line and includes the tributaries Peak Creek and Reed Creek as described below.

City / County: Giles Co.

Montgomery Co.

Pulaski Co.

Radford City

Use(s): Fish Consumption

Cause(s) /

VA Category: PCB in Fish Tissue/ 5A

The Virginia Department of Health (VDH) issued a fish consumption advisory on August 6, 2001 for polychlorinated biphenyls (PCBs) for the lower portion of the New River (Rt. 114 Bridge downstream to the VA / WVA State Line - 52.0 miles) based on fish tissue collections from Carp. An Advisory extension to Claytor dam was issued 8/06/2003 (11.47 miles) recommends that no carp be consumed in these waters and no more than two meals per month of flathead and channel catfish. The VDH PCB Fish Consumption Advisory was further extended upstream on the New River (13 miles) to the I-77 Bridge to include the lower portions of Peak Creek (4.02 miles), Reed Creek (16.35 miles) and Claytor Lake (4,287 acres) on 12/02/2004. The VDH advises consumption should not exceed two meals per month for carp and smallmouth bass. The VDH level of concern is 50 parts per billion (ppb) in fish tissue.

There are eight fish tissue collection sites within the 2010 data window reporting exceedances of the WQS based 20 ppb fish tissue value (TV) (VDH 50 ppb). These data are reviewed by the VDH in making an advisory determination. A complete listing of collection sites and associated fish tissue data are available at <http://www.deq.virginia.gov/fishtissue/fishtissue.html>. A more detailed presentation of the data can also be found using an interactive mapping application at <http://gisweb.deq.state.va.us/>. The VDH Advisory information is also available via the web at <http://www.vdh.virginia.gov/Epidemiology/PublicHealthToxicology/Advisories/>.

9-SNC000.20- 2004 fish tissue finds with application of the new WQS TV for PCB (20 ppb) the addition of 3 species exceeding the new TV criterion. Rock Bass (size 16-20 cm) at 25.21, SM Bass (size 28.6-30.5 cm) at 22.13 and White sucker (1 fish) at 30.08 ppb. Stony Creek is therefore a 2010 addition based on the new WQS PCB tissue value of 20 ppb.

New River, Claytor Lake, Peak Creek, Reed Creek and Stony Creek Fish Consumption	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
PCB in Fish Tissue - Total Impaired Size by Water Type:		4,286.76	76.61

Sources:

Source Unknown

*Narrative descriptions, Location and City/County describes the entire extent of the Impairment. Sizes may not represent the total overall size of the impairment in terms of stream name only.

Stream Data & Statistics	
Hardness, total	
Collection Date & Time	mg/L as CaCO ₃
06/12/2003 09:00	103
04/10/2003 09:30	178
03/10/2003 12:30	91.4
02/11/2003 08:55	73.4
01/22/2003 14:15	93.8
12/12/2002 14:15	69.1
11/20/2002 12:30	106
10/31/2002 09:20	68.7
09/19/2002 09:45	101
08/20/2002 09:30	62.1
07/30/2002 10:50	74.5
06/25/2002 08:30	79.2
05/30/2002 09:15	89.3
04/30/2002 10:30	81.2
03/18/2002 13:00	109
02/25/2002 14:00	47
01/23/2002 10:05	67.8
12/18/2001 13:30	44.5
10/25/2001 13:50	40.1
09/11/2001 09:30	57.6
08/15/2001 12:50	68.9
07/17/2001 10:30	52.1
06/25/2001 08:30	114
05/17/2001 09:00	112
04/10/2001 10:15	73.4
03/08/2001 10:00	28.1
02/06/2001 11:00	155
01/17/2001 11:30	75.3
12/27/2000 13:00	65.4
11/29/2000 10:30	63.3
10/18/2000 10:00	83.4
09/19/2000 09:00	75.9
08/16/2000 13:35	72.4
07/26/2000 09:40	72.6
06/26/2000 09:35	62
05/24/2000 09:05	92
04/06/2000 09:15	59
03/29/2000 12:00	61
02/14/2000 09:00	60.9
01/26/2000 09:15	65.1
mean hardness	78.7

Stream Data & Statistics

Temperature

Temp (°C)	Collection Date & Time	Temp (°C)
7.4	12/02/2013 12:00	
12.4	11/18/2013 13:25	
20.1	09/18/2013 11:30	
21.5	07/30/2013 14:10	
21.19	07/11/2013 09:50	
16.5	05/23/2013 12:35	16.5
4.7	03/07/2013 14:05	4.7
6.4	01/15/2013 14:35	6.4
6.6	12/12/2012 11:10	
14.3	10/17/2012 11:30	
21.9	08/22/2012 11:10	
21	06/19/2012 10:30	
13	04/03/2012 10:45	13
5.3	01/25/2012 12:15	5.3
10.2	11/29/2011 11:00	
20.5	09/15/2011 11:15	
23.4	07/19/2011 09:45	
15.6	05/18/2011 08:22	15.6
16.7	05/11/2011 10:30	16.7
10	03/24/2011 10:05	10
1.7	01/20/2011 10:00	1.7
12	11/18/2010 13:50	
16.2	10/25/2010 09:15	
26.1	09/02/2010 14:35	
24.6	07/20/2010 15:10	
20.1	05/26/2010 14:45	20.1
16.7	05/18/2010 09:00	16.7
11.2	03/24/2010 15:00	11.2
8.9	01/28/2010 12:40	8.9
11.6	11/17/2009 15:00	
20.8	09/21/2009 12:20	
21.6	07/21/2009 15:00	
15.1	05/12/2009 10:30	15.1
7.1	03/10/2009 12:25	7.1
5.5	01/22/2009 14:50	5.5
9.6	11/19/2008 12:30	
21.5	09/10/2008 14:20	
21.1	07/02/2008 13:15	
16.4	05/15/2008 13:45	16.4
5.9	03/05/2008 11:00	5.9
5.6	01/23/2008 10:30	5.6
9.7	11/29/2007 10:30	
22.2	09/27/2007 10:00	
23.1	07/17/2007 12:15	
14.8	05/09/2007 12:25	14.8
8.8	03/20/2007 09:15	8.8
6.2	12/14/2006 09:30	
23.2	08/14/2006 10:45	
17.6	06/08/2006 09:50	
9.2	04/06/2006 09:00	9.2
5.1	02/21/2006 10:00	5.1
5.4	12/19/2005 10:45	
13.1	10/27/2005 09:40	
24	08/10/2005 10:00	
17.7	06/07/2005 10:00	
12.08	04/19/2005 09:10	12.08
4.63	02/17/2005 09:30	4.63
11.11	12/01/2004 10:30	
14.3	10/27/2004 09:45	
23.3	08/25/2004 12:30	
20.9	06/22/2004 09:30	
13.73	04/21/2004 15:55	13.73
5.14	02/18/2004 10:15	5.14
22.9	wet season: Jan - May	16.6

90% annual
temp

90% wet
season temp

Stream Data & Statistics

Collection Date & Time	pH
12/02/2013 12:00	7.5
11/18/2013 13:25	7.9
09/18/2013 11:30	7.7
07/30/2013 14:10	7.5
07/11/2013 09:50	7.37
05/23/2013 12:35	7.7
03/07/2013 14:05	7.6
01/15/2013 14:35	7.3
12/12/2012 11:10	7.3
10/17/2012 11:30	8.3
08/22/2012 11:10	7.9
06/19/2012 10:30	7.8
04/03/2012 10:45	8.2
01/25/2012 12:15	8.2
11/29/2011 11:00	8.2
09/15/2011 11:15	8.5
07/19/2011 09:45	7.8
05/18/2011 08:22	7.5
05/11/2011 10:30	8.3
03/24/2011 10:05	7.9
01/20/2011 10:00	8.4
11/18/2010 13:50	8.2
10/25/2010 09:15	7.3
09/02/2010 14:35	8
07/20/2010 15:10	8
05/26/2010 14:45	8.3
05/18/2010 09:00	7.4
03/24/2010 15:00	8.3
01/28/2010 12:40	8.2
11/17/2009 15:00	8.1
09/21/2009 12:20	8.2
07/21/2009 15:00	8.5
05/12/2009 10:30	6.8
03/10/2009 12:25	8.2
01/22/2009 14:50	8.2
11/19/2008 12:30	8.3
09/10/2008 14:20	8.2
07/02/2008 13:15	7.5
03/05/2008 11:00	8.1
01/23/2008 10:30	8
11/29/2007 10:30	8.1
09/27/2007 10:00	8.2
07/17/2007 12:15	7.7
05/09/2007 12:25	8.3
03/20/2007 09:15	8.2
12/14/2006 09:30	8.2
08/14/2006 10:45	7.6
06/08/2006 09:50	7
04/06/2006 09:00	6.8
02/21/2006 10:00	7.8
12/19/2005 10:45	7.5
10/27/2005 09:40	7.8
08/10/2005 10:00	7.2
06/07/2005 10:00	7.8
04/19/2005 09:10	8.11
02/17/2005 09:30	8.06
12/01/2004 10:30	7.45
10/27/2004 09:45	7.1
08/25/2004 12:30	7.63
06/22/2004 09:30	7.47
04/21/2004 15:55	7.59
02/18/2004 10:15	7.75
90% maximum pH	8.3
10% maximum pH	7.3

Stream Data & Statistics

Ammonia Nitrogen parameter code 610		
mg/L as N	Collection Date & Time	mg/L as N
0.04	12/14/2006 09:30	
0	08/14/2006 10:45	
0.13	06/08/2006 09:50	
0	04/06/2006 09:00	0
0	02/21/2006 10:00	0
0.04	12/19/2005 10:45	
0	10/27/2005 09:40	
0	08/10/2005 10:00	
0	06/12/2003 09:00	
0	04/10/2003 09:30	0
0.05	03/10/2003 12:30	0.05
0	02/11/2003 08:55	0
0	01/22/2003 14:15	0
0	12/12/2002 14:15	
0.05	11/20/2002 12:30	
0.05	10/31/2002 09:20	
0.05	09/19/2002 09:45	
0.06	08/20/2002 09:30	
0	07/30/2002 10:50	
0	06/25/2002 08:30	
0	05/30/2002 09:15	0
0	04/30/2002 10:30	0
0.04	03/18/2002 13:00	0.04
0	02/25/2002 14:00	0
0	01/23/2002 10:05	0
0	12/18/2001 13:30	
0	10/25/2001 13:50	
0	09/11/2001 09:30	
0	08/15/2001 12:50	
0	07/17/2001 10:30	
0	06/25/2001 08:30	
0	05/17/2001 09:00	0
0.05	04/10/2001 10:15	0.05
0	03/08/2001 10:00	0
0	02/06/2001 11:00	0
0	01/17/2001 11:30	0
0	12/27/2000 13:00	
0.05	11/29/2000 10:30	
0	10/18/2000 10:00	
0	09/19/2000 09:00	
0	08/16/2000 13:35	
0	07/26/2000 09:40	
0	06/26/2000 09:35	
0	05/24/2000 09:05	0
0	04/06/2000 09:15	0
0	03/29/2000 12:00	0
0	02/14/2000 09:00	0
0	01/26/2000 09:15	0
0.01	high flow months	
yearly average	January - May	
	high flow average	

Stream Data & Statistics

Nitrate Nitrogen parameter code 620		Chloride, total parameter code 940	
Collection Date & Time	mg/L as N	Collection Date & Time	mg/L
06/12/2003 09:00	1.34	06/25/2001 08:30	9.9
04/10/2003 09:30	2.11	05/17/2001 09:00	11.7
03/10/2003 12:30	1.66	04/10/2001 10:15	10.2
02/11/2003 08:55	1.08	03/08/2001 10:00	10
01/22/2003 14:15	1.37	02/06/2001 11:00	15.4
12/12/2002 14:15	1.02	01/17/2001 11:30	9.2
11/20/2002 12:30	1.56	12/27/2000 13:00	8.2
10/31/2002 09:20	0.56	11/29/2000 10:30	8
09/19/2002 09:45	0.51	10/18/2000 10:00	8.6
08/20/2002 09:30	0.35	09/19/2000 09:00	9.1
07/30/2002 10:50	0.47	08/16/2000 13:35	8.1
06/25/2002 08:30	0.67	07/26/2000 09:40	6.4
05/30/2002 09:15	0.83	06/26/2000 09:35	6.6
04/30/2002 10:30	0.96	05/24/2000 09:05	8.8
03/18/2002 13:00	1.25	04/06/2000 09:15	9.1
02/25/2002 14:00	0.88	03/29/2000 12:00	9.2
01/23/2002 10:05	0.47	02/14/2000 09:00	8.1
12/18/2001 13:30	0.62	01/26/2000 09:15	7.5
10/25/2001 13:50	0.67	average	9.12
09/11/2001 09:30	0.72		
08/15/2001 12:50	1.05		
07/17/2001 10:30	0.85		
06/25/2001 08:30	1.31		
05/17/2001 09:00	1.28		
04/10/2001 10:15	0.98		
03/08/2001 10:00	0.62		
02/06/2001 11:00	1.72		
01/17/2001 11:30	0.69		
12/27/2000 13:00	0.45		
11/29/2000 10:30	0.53		
10/18/2000 10:00	0.59		
09/19/2000 09:00	0.72		
08/16/2000 13:35	0.64		
07/26/2000 09:40	0.81		
06/26/2000 09:35	0.55		
05/24/2000 09:05	1.05		
04/06/2000 09:15	0.93		
03/29/2000 12:00	0.91		
02/14/2000 09:00	0.75		
01/26/2000 09:15	1.88		
average	0.94		
		Sulfate, total parameter code 945	
Collection Date & Time	mg/L as SO₄		
06/25/2001 08:30	9.4		
05/17/2001 09:00	10		
04/10/2001 10:15	8.9		
03/08/2001 10:00	8.6		
02/06/2001 11:00	12.2		
01/17/2001 11:30	9.3		
12/27/2000 13:00	10.1		
11/29/2000 10:30	8.4		
10/18/2000 10:00	8.7		
09/19/2000 09:00	9.3		
08/16/2000 13:35	7.9		
07/26/2000 09:40	5.7		
06/26/2000 09:35	8.1		
05/24/2000 09:05	8.7		
04/06/2000 09:15	7.7		
03/29/2000 12:00	7.6		
02/14/2000 09:00	8.3		
01/26/2000 09:15	7.5		
average	8.69		

Stream Data & Statistics

Antimony, dissolved parameter code 1095		Manganese, dissolved parameter code 1056	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0	06/26/2001 15:00	13.23
11/20/1997 10:05	0	11/20/1997 10:05	15.4
average	0.00	average	14.32
Arsenic, dissolved parameter code 1000		Mercury, dissolved parameter code 50091	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0.44	06/26/2001 15:00	0
11/20/1997 10:05	0.25	average	0.00
average	0.35		
Cadmium, dissolved parameter code 1025		Nickel, dissolved parameter code 1065	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0	06/26/2001 15:00	0.55
11/20/1997 10:05	0	11/20/1997 10:05	0.22
average	0.00	average	0.39
Chromium, dissolved parameter code 1030		Selenium, dissolved parameter code 1145	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0.18	06/26/2001 15:00	0
11/20/1997 10:05	0.18	11/20/1997 10:05	0
average	0.18	average	0.00
Copper, dissolved parameter code 1040		Silver, dissolved parameter code 1075	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0.67	06/26/2001 15:00	0
11/20/1997 10:05	0.62	11/20/1997 10:05	0
average	0.65	average	0.00
Iron, dissolved parameter code 1046		Thallium, dissolved parameter code 1057	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0	06/26/2001 15:00	0
11/20/1997 10:05	0	11/20/1997 10:05	0
average	0.00	average	0.00
Lead, dissolved parameter code 1049		Zinc, dissolved parameter code 1090	
Collection Date & Time	ug/L	Collection Date & Time	ug/L
06/26/2001 15:00	0	06/26/2001 15:00	5.93
11/20/1997 10:05	0	11/20/1997 10:05	1.42
average	0.00	average	3.68